

Which frequency band is most important to the DON?

There is no one specific frequency band that is the most important band to the Department. However, the preponderance of the frequencies used by the DON is between 30 Hz to 3 GHz. The Extremely Low Frequency (ELF) band and Very Low Frequency (VLF) band support our tactical submarine forces and other DON capabilities, while higher frequencies in the Very High Frequency (VHF), Ultra High Frequency (UHF) and Super High Frequency (SHF) bands support communications and a myriad of other DON capabilities such as unmanned aerial vehicles. Frequencies in the EHF band support critical DON satellite communications that provide immediate, worldwide communications and intelligence capabilities.

Does the DON use frequencies or have an interest in frequencies higher than the EHF band?

Yes. The DON uses infrared frequencies to support a number of Marine Corps and Navy imaging capabilities. Additionally, the DON uses visible light frequencies to support laser range finder capabilities as well as laser targeting systems. Similar to the radio frequency bands, the DON'S requirements for the use of visible spectrum are growing.

Why is the electromagnetic spectrum important to the DON?

The DON has a unique challenge among the military services since forward deployed Marine Corps forces and the fleet do not have direct access to commercial or military communications systems via landline. The only access to vital communications for forward deployed and at sea forces is via wireless links.

To ensure the Marine Corps and Navy have capable, reliable wireless communications, a broad range of the spectrum is required to support the diverse functions and global responsibilities of the naval services.

What should be in my spectrum reference library?

✓ SECNAVINST 2400.1, Electromagnetic Spectrum Policy and Management – http://dodssp.daps.mil/Directives/2400_1.pdf

✓ MCO 2400.2, Marine Corps Management of the Radio Frequency Spectrum - go to the Marine Corps home page at <http://www.usmc.mil>, click on the Publications link at the top, go to the link on the left for Orders and Directives and type "spectrum" in the search bar.

✓ OPNAVINST 2400.20E, Navy Management of the Radio Frequency Spectrum – <http://dodssp.daps.mil/Directives/2400e20.pdf>.

✓ NTIA Manual, National Telecommunications and Information Administration Manual of Regulations and Procedures for Federal Radio Frequency Management – <http://www.ntia.doc.gov/osmhome/redbook/redbook.html>.

✓ The FCC rules, Title 47 of the Code of Federal Regulations – <http://wireless.fcc.gov/rules.html>.

We have enjoyed answering these fundamental questions about the electromagnetic spectrum. There is no such thing as a "dumb" question, so if you have any spectrum questions, please e-mail them to DONSpectrumTeam@navy.mil. **CHIPS**

ONR's Early Beginnings

Between 1946 and the founding of the National Science Foundation in 1950, the Office of Naval Research was the federal government's only agency whose principal mission was the support of basic research.

In the aftermath of World War II, Americans credited big science, pure science, with having done much to win the war. Even given the traditional American fascination with invention, progress and technology, the Second World War forced technical and scientific advance into popular thinking about defense to an unprecedented extent. People remembered Pearl Harbor and never wanted to be surprised like that again, and saw technology as a guarantor of security. Basic science shared the aura of victory.

The original permanent basic research establishment, ONR, evolved over the last 60 years into something more diversified and in some respects more accountable to its customers than its founders envisioned.

The greatest change occurred in fiscal year 1992, when the Office of Naval Technology (ONT) and the Office of Advanced Technology (OAT), separate agencies that reported to the Chief of Naval Research, were folded into ONR.

With the absorption of ONT and OAT, ONR was "reinvented" and became responsible for applied research and technology development. Since then ONR has worked to integrate the research it supports and to produce an investment portfolio that does justice to its several constituencies: Congress, the fleet, the force, industry and universities.

– Fact sheet from ONR's history page: http://www.onr.navy.mil/about/history/docs/st_invest_pov.pdf.